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" Scire est nescire, nisi id me
Scire alius sciret.

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SOME PHASES OF QUACKERY IN RELATION TO DISEASES OF THE EYE.

The Presidential Address, delivered on October 12th, 1921, at the opening of the Forty-eighth Session of the Bristol Medico-Chirurgical Society.

BY

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IN the first place I wish to thank you for the very great honour you have done me in electing me your President for this year. I feel that I am not worthy of holding so distinguished a position, and that it is to some extent a recognition of the importance of the branch of medicine with which my work has been associated. The first meeting of this Society that I ever attended, thirty years ago this week, was addressed from the presidential chair by that distinguished ophthalmologist Mr. Richardson Cross, whose work for the advancement of ophthalmology throughout the whole of the West of England is so well known to you all.

That I am elected to follow him and many other distinguished Presidents in occupying this chair is an honour which I assure you I appreciate very highly. I promise to conduct the business of these meetings to the best of my ability, but I fear that I shall have to ask your indulgence on many occasions, since the task for one who has practised only as a specialist is by no means an easy one.

Scarcely any branch of medicine has been more invaded by advertising charlatans than has ophthalmology, and I propose to call your attention this evening to some phases of quackery in relation to diseases of the eye. The term "Quack" or "Quack-salver" came into common use in the reign of Charles I., and refers of course to the noisy, reiterated chatter of the medicine vender at fairs. A quack doctor has been defined as "a boastful pretender to medical skill, an empiric, an ignorant practitioner." Quackery is, however, to some extent a relative term. Much of our practice is still founded on empiricism, and the empiric of to-day may quite possibly be regarded by the practitioners of a generation or two hence as having been guilty of quackery. The practice of bleeding patients before and after operation, as was customary a hundred years ago, might be denounced as quackery. Sir Wm. Blizard, the eminent surgeon, was operated upon for cataract at the age of 92. He was bled to 8 ounces on the evening of the operation. Lawrence in his *Venereal Diseases of the Eye* relates the case of a prize-fighter suffering from gonorrhœal ophthalmia who was bled to 152 ounces in four days, besides having 44 leeches applied. Pure empiricism is not necessarily quackery. As Dr. Gould of Philadelphia puts it, "a quack is a man more interested in himself than in his healing art; caring more for his patent than his patient." The doctor is not called upon to cure a disease but to treat a patient. Quackery to a great extent ignores the patient, and confines

its attention to the disease, *i.e.* it unduly exalts the remedy.

During the Middle Ages the treatment of diseases of the eye was very largely in the hands of itinerant quacks, who went from fair to fair selling nostrums to the credulous, and couching cataracts when occasion offered. Now I think there can hardly be any more satisfactory operation in the whole realm of surgery than the successful removal of a cataract from a blind patient, but the operation of couching, that is depressing the opaque lens from the pupil into the lower part of the vitreous, though giving brilliant results for the moment, was often followed by glaucoma or other serious diseases of the eye, so that the itinerant quack had a great advantage over the regular practitioner, who had to abide the consequences of his handiwork, whereas the quack, after the fee was paid, need not see his patient again. Couching is still the routine treatment for cataract in India. These itinerant operators care little for the ultimate success of the operation, and investigations show that at least two-thirds of the cases are immediately or ultimately failures.

For thousands of years there seems to have been practically no advance in the treatment of cataract, until 1745, when Daviel in France began the operation of extraction of the lens.

It was about the time of James I. that those practising ophthalmology were first called "oculists." Most of them were quack-salvers, and the term oculist has in consequence never found much acceptance with members of the medical profession. Further, some of these oculists boasted of their entire ignorance of medicine and surgery, regarding such knowledge as confusing and detrimental to success.

Early in the eighteenth century quackery sprang into increased importance, and spread the world over, from China

to Peru. Infallible remedies for all sorts of diseases were freely advertised. Oliver Goldsmith in his *Citizen of the World* observes, "There must be something strangely obstinate in an English patient who refuses so much health upon such easy terms."

Queen Anne, whose defective sight rendered her a god-send to quack oculists, revived the custom of "touching" for King's Evil, a procedure which a generation before was so frequently resorted to that it is recorded that Charles II. "touched" 92,000 of his subjects in 22 years, and of course took fees—"touch-pieces" as they were called—for doing so. It will be remembered that Dr. Johnson was taken to Queen Anne to be "touched." She was the last sovereign to assert a claim to the power of healing King's Evil. Herself a quack, and fond of anything mysterious, it is no wonder that she took an interest in quackery. She even went so far as to appoint as her oculists two charlatans. One was William Read, a tailor. In 1705 he received a knighthood, the ostensible reason being that he had "cured great numbers of seamen and soldiers gratis." The other quack was Roger Grant, a shoemaker, or as some say a tinker. He had lost one eye when serving as a soldier in the army of the Emperor of Germany. In spite of, or perhaps because of, this disability he set up as an oculist in Mouse Alley, Wapping. Addison alludes to him as being notorious for "putting out eyes with great success." In this irregular way began the now much-coveted and respected title of "Surgeon-oculist to the King."

About the middle of the eighteenth century there were many other "ambulant" practitioners who toured the country accompanied by all the apparatus of shameless advertisement (including "monkeys" we are told), couching cataracts and selling infallible salves and eye-washes. One of these preparations is still popular, Singleton's Golden Eye

Ointment. It was advertised as being able to cure all diseases of the eyes. This ointment, which is 7 per cent. red oxide of mercury, was invented, or, as some put it, discovered close upon 300 years ago, but most of these nostrums have passed away with their unscrupulous inventors.

Supreme amongst quacks of this period was "The Chevalier" Taylor, a full account of whose life occurs in the Royal London Ophthalmic Hospital Reports for 1915. He was a qualified surgeon, a man of immense energy and ability, and had travelled all over Europe. He was appointed "Ophthalmiator Pontifical" by Pope Benedict XIV., and was oculist to the Kings of England, Denmark, Poland, Norway and Sweden. His entry into towns which he honoured with his presence was not exactly by stealth. In what he calls "the crisis of his grandeur" he travelled "with no less than two coaches and six, above ten servants in livery, besides gentlemen, my companions, in my own pay." It is said that his coach was painted over with eyes, and bore the motto, "Qui visum dat, vitam dat." Leaflets, placards, and advertisements in the public press heralded his arrival. A sort of reception in the biggest hall in the town was arranged, and the gentry were invited every morning to see his method of restoring sight. He was frequently in conflict with his professional brethren. It was he who operated on Handel for cataract, "but on drawing the curtain we found the bottom defective." Though an unparalleled liar, he was by many tolerated as an amusing rascal.

Compared with the Chevalier Taylor present-day quacks may seem tame and dull. For anything like his audacity one has to go to America. The "means to do ill deeds" is sometimes the bogus qualification or degree, an useful asset to the quack. "Carnegie University, of Wilmington,

Delaware," was one of the bodies granting such degrees. It was successfully exposed by the American Medical Association. It appears that this University was run by a "Board of Regents," who began operations by conferring its degrees upon themselves. "What is the use of running a diploma mill unless you can furnish yourself with any title that may strike your fancy?" So five out of the eight Regents modestly conferred upon themselves the degree of M.D. A wily member of the staff of the journal of the American Medical Association wrote to Carnegie University applying for a degree, stating that he wished to practise as a bone-setter in England. He received in reply an examination paper to answer. Of course his answers were suitably faked. One of the questions was, "What is Keratitis? Give course and treatment." He answered, "Keratitis is an inflammation of the eye. It should be treated by manipulating the nerves and muscles of the neck, and by adjusting the vertebra of the neck." The treatment for Iritis was to be the same as for Keratitis. This was the only question on eye disease. I quote it to show that the long string of questions was equally applicable to the quack oculist or the bone-setter. The Board of Regents wrote that the candidate had passed "a very satisfactory examination," and that the diploma he wanted would be forwarded to him on receipt of fifty dollars. It is satisfactory to record that the President and Secretary of the Carnegie University were shortly afterwards imprisoned for fraud. The unsuspecting public are easily taken in by any self-styled oculist who cares to avail himself of such bogus diplomas.

In the States there were firms who made a business of collecting or even manufacturing laudatory letters and glowing testimonials in proof of the efficacy of any sort of patent medicine, and of the ability of any impostor who perambulated the country defrauding the ignorant.

The druggist in France is, I believe, forbidden to sell secret remedies or even keep them on his premises, and yet quack remedies flourish and abound in France. I shall never forget the well-known ophthalmic surgeon Dr. Darier of Paris recounting at a meeting in Oxford his experience of a firm of ophthalmic quacks who pitched their stumps in Paris. It was about the time when Bier's hyperæmic treatment was in vogue, and these rogues seem to have borrowed their notion of curing errors of refraction from Bier's suction apparatus. Darier consulted them one evening. The operator in a casual way picked up a sheet of paper, made two pencil dots on it and asked Dr. Darier what was the greatest distance at which he could distinguish the marks as being two separate dots. The limit was about one metre. An elaborate and magnificent suction apparatus, all polished and glittering, was applied to his orbital region, and in a most impressive manner a pumping movement was conducted, creating a slight vacuum. The test dots were again exhibited, but there was no material improvement. A second or third application of the instrument was then tried, after which Darier found that he could discern the dots at nearly two metres. All might have gone well had not the performer moved away, apparently to make some record of the result. Darier had the curiosity to pick up some sheets of paper lying on the table. On the back of each sheet he found two very conspicuous dots. He then looked at the sheet with which he had been tested, and found two small dots on the front and two much larger and more conspicuous ones on the back, the ones in fact which he had just been able to see at the greater distance. The inference was irresistible. As Dr. Darier quaintly put it, " His confidence was much shaken." I fancy the operators were next heard of in America, but of their subsequent history nothing can be ascertained.

The epidemic of quackery spread in Germany just as everywhere else, and was very active shortly before the great war. Emil Schlegel of Tübingen in 1887 discovered, or pretended he discovered, that the human iris, by its tints, fleckings and colours denotes the part of the body injured or diseased; that its spots, according to location, mean wounds of the ear or the skin, a syphilitic tumour, lung disease, prolapse of the uterus, etc. How anyone could have tolerated such humbug is a thing imagination boggles at. Palmistry is credibility itself by comparison.

Prior to the war there was in Wiesbaden a clinic which attracted large numbers of patients from all parts of the world, amongst whom of course were many hopeless cases. Amid much that was scientific and genuine there often seemed to run a vein of quackery. The seemingly hopeless case usually had wet pack and mercurial inunction. Several patients who have been under my own care resorted to this clinic. One man was suffering from a tumour of the pituitary body, another from alcoholic amblyopia. Both alike were subjected to wet pack and inunction. The one with amblyopia was at Wiesbaden when war was declared and had great difficulty in returning to England. The fact that this poor man wore blue glasses and spoke no German placed him at once under the gravest suspicion of being a spy. It is easy at any time to misinterpret evidence and to jump to wrong conclusions. You will recollect that a German newspaper described Holloway as "a town near London noted for its pills."

There have been in England from time to time, even in recent years, gross examples of ophthalmic quackery. About thirty-five years ago a party of Indian oculists travelled up and down the country professing to cure cataracts and other eye diseases. "Omne ignotum pro magnifico." These orientals, with no qualifications for the art to which they

made pretension other than a dusky skin and a smattering of English, made easy dupes of the ignorant, but eventually they got into trouble in Kent. A poor woman took her child aged 10 to these vagabonds. She was informed that each of the child's eyes contained a worm. After three weeks' treatment, and a payment by the mother of £2 4s. 0d., they alleged that the worms had been extracted. The quacks were prosecuted, convicted and imprisoned. Sporadic cases similar to this crop up from time to time. Only a few years ago a blacksmith in South Wales was exhibiting great power in curing diseases of the eye. I believe his services are still in request, but I have been unable to find any recent records of his activities.

In England, and I believe on the Continent and in America as well, a good deal of quackery is associated with the prescribing of spectacles by opticians. Sometimes it is the itinerant eyesight expert who, at immense personal inconvenience, and on the earnest solicitation of countless sufferers, has decided to sacrifice his own interests and those of his clients in London, and to pay a flying visit to some provincial town, where he confidently expects he will receive an enthusiastic welcome. Paragraphs to this effect appear in the local press, and leaflets are distributed broadcast in the streets. These claim, with conspicuous lack of modesty, that there is no defect of sight which Mr. Blank does not remedy in the most effective manner. Sometimes these manifestoes do not say exactly what they mean. One warns the *in*credulous public against unscrupulous imitators; another states, ambiguously enough, that "unless there is a reasonable hope of the patient being benefited he is at once told so; but should the case present any diminution of hope, it is undertaken, and in almost every instance successfully so."

This is not the time or place to enter into a discussion

of the pros and cons of granting licences to opticians. The Spectacle-makers Company and other bodies have instituted examinations in sight-testing, and it must be freely admitted that on the whole the public has greatly benefited by the improved knowledge of the subject which most opticians now possess. The public, however, have not yet grasped the fact that the oculist of to-day is a fully qualified doctor, while they are misled by a string of letters after an optician's name and regard him as having a medical qualification. Most opticians, no doubt, are competent and honest; at the same time there is a very great temptation for them to supply spectacles of some sort even when they afford no help, otherwise the optician can get no recompense for the time he has expended on his customer. Sometimes more spectacles than are really necessary, or even desirable, are supplied. A glaring example of this kind of fraud came under my notice some years ago. A newly-married man, with more money than sense, consulted (that is the term) a West End optician, who ordered him two pairs of spectacles—gold frames, toric lenses, astigmatic correction, and all the rest of it—and charged 10 guineas, which was cheerfully paid. A few days later he received a letter from the optician inviting him to purchase a complete outfit of spectacles. There were glasses for the tropics, others for the Alps, glasses for billiards, for fishing, and for tying flies, shot-proof glasses, glasses for evening dress, and glasses for reading. Wherever possible there was a duplicate pair in pince-nez frames. The whole packed in a polished mahogany box with lock and key for 100 guineas. Deduct the 10 guineas already paid, and say £90 cash down. Fortunately, before closing with this comprehensive offer the gentleman was prevailed upon by his wife to consult an ophthalmic surgeon, who found that only one pair of glasses was needed.

Half a century ago some of the best spectacle lenses

were made of quartz crystal, and opticians fostered the impression that wearing these "pebbles," as they were called, presented some great advantage. For a long time now the popularity of pebbles has waned, partly no doubt owing to the wearer being unable to detect the difference between quartz and glass, and so suspecting that though he had paid for pebbles he had after all only got glass. Recently the rage has been for lenses made according to the formula of Sir William Crookes. This glass was designed by him a good many years ago to protect the eyes of bottle makers and others working at furnaces from the excess of heat rays and ultra-violet rays. Half the opticians in the land are now advocating the use of Crookes' lenses or some variant of his original formula. A good deal of quackery results. The normal eye does not need shielding from a normal amount of ultra-violet rays, and there is no real evidence in favour of the indiscriminate use of Crookes' glass.

For many years I have known of an unqualified practitioner who claims the possession of a secret method of curing visual defects, which has been handed down from generation to generation. Cataract, leucoma, even optic atrophy is not altogether beyond the reach of his remedies. I have seen several patients who have come under the spell of this charlatan. His leading line in all difficult cases seems to be the supplying of excessively strong lenses. A man with 12 dioptres of myopia and an advanced degree of cataract was ordered to wear a +8 sph. for constant wear, and to practise reading with a +14 sph. lens as a cure. His reading distance with this lens was about two inches. He found the treatment caused so much discomfort that after a month or two he had to abandon the cure.

The optician in difficult cases is at a very great disadvantage. A mydriatic is often absolutely necessary in order that refractive error may be accurately estimated, and

the risk of glaucoma as the result of a mydriatic is so very definite that no unqualified practitioner should ever be allowed to use it. This risk has no doubt been recognised at last by the quack, and it is many years since I have seen a patient who was using " anti-cataract oil." This preparation contained belladonna in some form, and must have been responsible for very many cases of glaucoma. There are still, however, enterprising spirits who advertise something of the kind, though possibly not containing any belladonna. Only a few days ago I saw a farmer of 85 who for ten years had paid periodical visits (not to mention fees) to a quack who supplied him with drops intended to disperse an already mature cataract.

In 1910, at the instance of the General Medical Council, a Blue Book was published containing a great deal of information as to the prevalence of quackery and the harm it was doing to the nation. The market place of every country town is systematically visited by ignorant medicine venders who defraud the poor. The evidence collected shows that one of the reasons why ophthalmic quackery is so common is that the facilities for proper advice and treatment are inadequate or the cost of them beyond the means of the poor. Comparatively few doctors, it says, are qualified to do ophthalmic work or can afford the time for it. The result of this is that the public continue to think that defective sight is not a matter about which they need consult the family doctor, and so many of them go instead to the chemist or the optician.

Most of you know that there is a body called the " Council of British Ophthalmologists " which was instituted some three and a half years ago. Amongst various matters that have come under their consideration is the question of sight-testing by opticians. Their report on this matter has not yet been published, but it appears that for the present they

recommend that no active steps be taken. Indeed, it seems obvious that a certain amount of testing for spectacles cannot be objected to. Why should not a presbyope of 50 buy a pair of spectacles without consulting a doctor, just as he would buy a pocket magnifying glass, or any of the appliances which mitigate the disabilities of advancing years. Presbyopia is not yet a notifiable disease, in fact it is hardly a disease at all. Neither the public nor the profession is likely to suffer much at the hands of the sight-testing optician, provided he knows his trade and is honest. But the possibility of his overlooking glaucoma, optic neuritis, or other eye diseases is considerable. The public should be warned of this, and have the opportunity of getting proper advice at a cost that is within their means. A State medical service should ensure the provision of a sufficient number of well-staffed and properly equipped ophthalmic clinics within easy reach both of town and country dwellers. This is already being done for children in elementary schools, and the parent may reasonably claim the same advantages as his children enjoy. Provision of these clinics will involve some increase in the number of trained ophthalmologists, but the numbers at present entering the medical profession are probably sufficient to meet the demand, and the various diplomas in ophthalmology which have recently been instituted in association with schools of ophthalmology are a great advance on the opportunities existing thirty years ago.

Lastly, the profession as a whole, particularly those in general practice, whether panel practice or not, must actively help in the suppression of quackery. Restrictive legislation may do a little towards this end, but it cannot do much. Quackery is a hundred-headed hydra, and cannot even be muzzled, let alone choked, by making it illegal. The family doctor can help by showing up examples of quackery, and

by urging the authorities to provide the facilities I have suggested wherever he finds them lacking. He should, if possible, keep in touch with the nearest eye department or clinic, either by visiting the institution, or at least by writing or telephoning about the patients he sends there for consultation. He will thus maintain an interest in ophthalmology, and will learn better its possibilities and limitations, and thus be enabled to decide when to persuade his patients to seek special advice, rather than allowing them to drift to the optician or the quack. By doing this he will more than ever deserve to be regarded as their guide, philosopher and friend.

THE LONG FOX LECTURE:

THE EIGHTEENTH ANNUAL LECTURE ARRANGED BY THE COMMITTEE OF THE LONG FOX LECTURE,
DELIVERED IN THE PHYSIOLOGICAL LECTURE THEATRE OF THE UNIVERSITY OF BRISTOL ON DECEMBER 28TH, 1921.

SIR HENRY GRAY, K.B.E., C.B., *in the Chair.*

BY

ERNEST W. HEY GROVES, M.S., F.R.C.S.,

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ON

THE REPAIR OF BONE INJURIES.

I FEEL it a very great honour to have been asked to give this Long Fox Memorial Lecture, both because it associates me in the first place with one who was a great clinician and one who by his interest in research has even to this day stimulated interest in medical science, and also because it associates me with an honourable line of predecessors.

Five thousand years ago a young man in Egypt suffered a fracture of his radius, and was treated in the most approved

fashion of the time by having his arm splinted by the central rib of a palm leaf. Shortly after he met his death, and his bone, still supported by the primitive splint, is now to be seen in the Royal College of Surgeons. Eight hundred years ago in a village of Wessex a woman who had fractured her humerus had it bandaged up and then surrounded by two plates of thin copper. The remains can still be seen in the Museum at Reading.

This is a fair representation of the treatment of bone injuries up till twenty-five years ago, when two great factors were introduced which greatly changed our conception of the actual treatment of bone repair. One, the introduction of the X-rays ; the other, the general adoption of Industrial Insurance. Both these factors served to show that bone repair was often unsatisfactory, and led to a very great crippling and loss of function.

During the last generation advance has been along four roads. In the first, the treatment of fractures in which there has been little or no displacement has been by massage and early movement rather than splinting, and the improvement produced by this practice, chiefly associated with the name of Lucas-Championniere, has not merely been due to the special type of massage and early movement, but also to the negative factor of the absence of immobilisation. The second road along which knowledge developed is that for gross displacements direct open operative treatment has been devised. Thirdly, that for the great majority of fractures with serious displacement traction systems, by which the ends of the bones are held apart from one another, have been introduced. Lastly, for those cases which either by injury or by the action of disease present a loss of substance the treatment by bone grafting has been devised and brought to a state of practical utility.

It will first of all be useful to discuss one or two of these

advances in knowledge from an experimental point of view, and then to follow up the facts into the clinical realm.

The first observation (Fig. 1) concerns the union of a complete fracture by means of a short metal plate attached by screws. You will observe that after a lapse of a few weeks the bones have come apart and are much angulated and deformed. This is a fair representation in a somewhat extreme form of what commonly happens when too much reliance is placed upon the fixation of a fracture by a short plate. That is to say, unless it is supplemented by external splinting it cannot keep the bone in position. The second observation (Fig 2) shows that if a large metal peg be placed inside the bone of a size to act as an efficient splint firm union will take place. A further comparison between these two specimens, the one united with a short plate and the other with a large peg, shows that in the first there was sepsis and discharge, whereas in the second healing was perfect. This difference is not due to the position of the large peg inside the bone, as you will see by the consideration of another specimen (Fig. 3) in which a fracture of the femur has been fixed by a plate two-thirds of the length of the bone and by a number of perforating pins. Here too union is absolutely strong and healing has been perfectly smooth.

The lesson from the comparison of such experiments seems to be perfectly clear, and it is that metal substances may be used for the repair of bone and be tolerated by the tissues perfectly, but it is essential that they should be strong enough, large enough, and sufficiently firmly fixed to restore absolute continuity to the mended bone. If the bones are weakly tied together so that movement occurs between them, then the metal substances will become loosened and a septic sinus will be formed.

Another experiment shows that the most perfect artificial

support for simple fractures of the long bones consists in a traction appliance, which whilst firmly holding the two extremities of the bone does not directly interfere with the seat of fracture. Bones tied in this way show the most

FIG. 1.

Cat's femur, 4 weeks after union by short plate and screws.

FIG. 2.

Cat's femur, 6 weeks after fracture, fixed by means of a steel peg.

FIG. 3.

Cat's femur, 8 weeks after fracture, united by a long plate and perforating pins.

perfect type of quick and yet complete bone repair. (Fig. 4.) There is neither non-union, callus excess, nor deformity, and there can be no doubt that such a system should be the ideal one for the treatment of human fractures.

If, however, a gap exists in one of the long bones, at any rate in an adult, this gap usually remains permanently ununited. If a portion of the shaft of a bone be removed, even though the periosteum

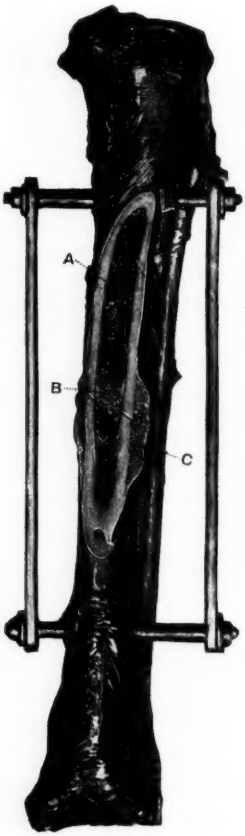

FIG. 4.

Cat's tibia, 4 weeks after fracture, united by a double transfixion appliance.

FIG. 5.

Cat's tibia, 4 weeks after removal of a piece of the shaft. Bone chips were placed in the gap.

remain, and if the gap is filled up by means of a number of bone chips taken from the excised portion, at the end of several weeks not only will union be absent but a great number of the bone chips will be absorbed. (Fig. 5.) This fact is one of great importance, and if it were not true then the filling up of defects of living bone would always be most readily accomplished by packing the gap with scraps of bone tissue taken from some redundant bone, such as a rib. There is only one satisfactory way of filling such a gap, and that is by placing in it a piece of living bone of the full size necessary to completely fill the gap; and further, it is not sufficient

FIG. 6.

Graft (a) fixed into a gap in a cat's tibia by metal pins and washers, with firm union.

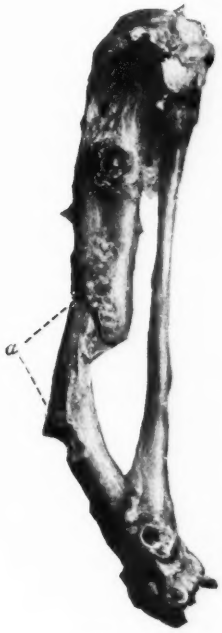

FIG. 7.

Graft (a) tied into a gap in cat's tibia with catgut, with marked displacement.

merely to drop the graft into its place, but it must be put into wide contact with the adjacent bone and fixed firmly to it. If this fixation be carried out by means of fitting and shaping, it is the ideal method; but if not, a graft will grow in place much better if it is fixed to its bed by metal pins or screws than if it is merely loosely tied by sutures of catgut. (Figs. 6 and 7.)

Another observation will show that the graft used must be of the full size of the gap it is to fill, and that it cannot be expected that a small graft will grow so as to fill a large place. (Figs. 8 and 9.)

FIG. 8.

A gap fracture of the radius into which a small piece of tibia has been loosely dropped. No union has occurred.

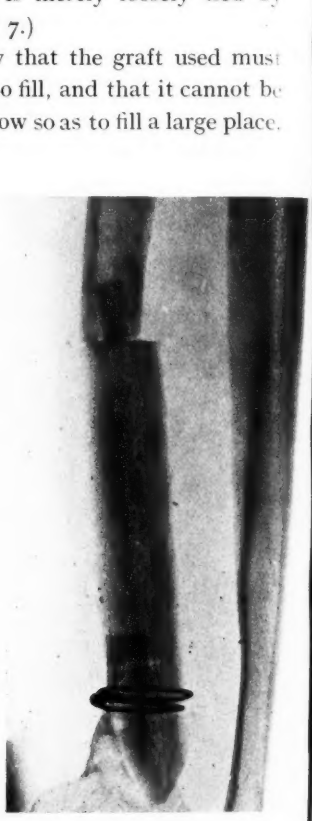

FIG. 9.

Same case as Fig. 8. The gap has filled by a large graft, which has into place.

There are two vital processes constantly going on in living bone, and these also occur in grafted bone. These are the formation of new bone and also the absorption of old bone. We cannot tell exactly what determines the proportion between these two processes, but it is possible to prove quite definitely that bone growth, that is the formation of new bone, will never take place in conditions of health unless the bone concerned is subjected to stress, that is, actual transmitting of weight or force. But a bone graft not only acts as a living tissue which under suitable conditions will build up new bone, but it also acts as a strut and a scaffold along and around which living bone spreads. This second function of a graft can be undertaken by dead bone as well as by living, and there are certain conditions in which dead bone

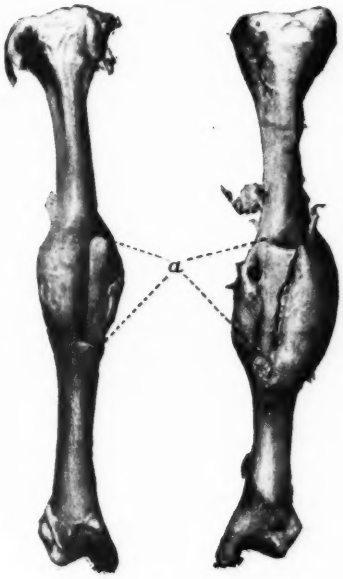

FIG. 10.

Two tibias of a cat. Into the left a living and into the right a dead bone graft has been fixed, with almost identical results.

is actually better than living for the purposes of a graft. (Fig. 10.)

Very briefly stated, the above are some of the simple facts which may be learned from experimental results, and it will now be possible to see how such general principles are illustrated in the clinical repair of bone injuries.

That a living bone graft has certain definite capacity for growing and for resisting disease is shown by various observations. One of the most striking of these is the condition

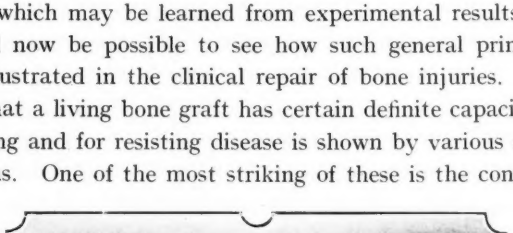

FIG. 11.

Central sequestrum in a graft placed in a gap fracture of the radius.

in which a living bone graft will often throw off a portion of its substance as a sequestrum, and in one striking instance which I have observed, this dead portion was in the centre of the living graft, so that it must have been separated by the vital action of the bone cells in the graft itself. (Fig. 11.) Another common manifestation of inherent vitality in the graft is presented by the formation of callus union in the repair of a fracture of the graft.

It has often been suggested that the periosteum surrounding the shafts of bone has an inherent power of forming new bone, and that by taking flaps of this membrane bridges may be formed which will cover in gaps and defects in the bone; but such an idea is founded upon false observations, and any attempt to fill up a gap formed by periosteal flaps will be doomed to failure, because such flaps after throwing ou

minute pieces of bone may be then absorbed long before continuity has been restored.

Another frequent error which is made is the attempt to fill up gaps in the bone of human beings by means of comparatively small chips taken from other parts. It has already been pointed out that a simple experiment will prove the futility of this, and yet you will see in the series of pictures before you many instances where a small fragment of bone has been loosely thrown into a gap fracture. Some weeks later, non-union still existing, a metal plate has been added (see Figs. 8 and 9) and fixed by screws. Non-union still persists, and usually, as the bones are wobbling about upon one another, the metal plate and its screws have to be removed because of the resulting sinus. Ultimately, such a case will either present permanent non-union, or else vital restitution of continuity can only be brought about by taking a large live piece of bone and fixing it securely to the fragments on either side.

This actual problem of the mechanical fixation of the graft to its bed has occupied much time and attention. Many methods are possible, some being particularly suited for some bones and others for others. For example, in the gap fracture of one of the forearm bones the graft may be shaped something like a cricket bail, the two small ends of which are firmly thrust into the marrow cavity of the fragments at each side of the gap. (Fig. 12.) In bones such as the tibia a deep groove is cut in each fragment, and into this groove a strong piece of bone from the opposite leg is firmly fitted by a mortise inlay. In certain situations, such as the upper end of the femur or the lower end of the humerus, a graft may be thrust right into the centre of the bone by boring a hole right through the articular extremity of the tubular bone, and then using the graft as a stout central

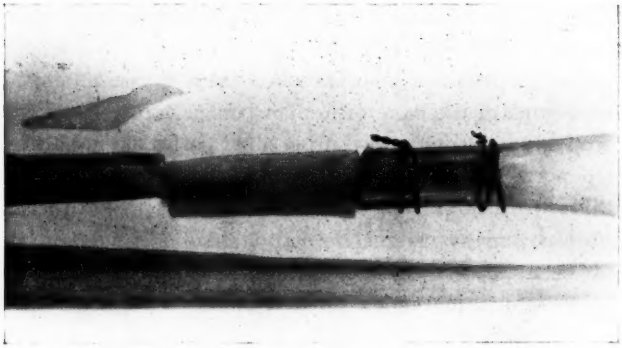

FIG. 12.
"Cricket bail" graft inserted into a gap in the radius.

nail which is driven through one end of the bone into the main shaft. (Figs. 13 and 14.)

Again, in a bone like the humerus, which has nothing but soft tissues to support it, the mechanical problem of fixing the graft will present some difficulty. After a period of some months, when a gap has existed in the humerus, the bone will have become so thin by atrophy that nothing is left except a fragile shell. Any cutting into the surface of such a tubular bone will rob it of its only element of strength. Therefore in such a case the graft must be thrust up as a peg firmly fitted into the hollow marrow cavity. In order to give this peg an extra thickness at the site of the gap the grafting is done by two pieces. One is thrust into the upper fragment, the other into the lower, each graft being allowed to project to a distance equal to that of the gap, and here the two projecting pegs are fitted together and fixed into position. (Figs. 15 and 16.)

The reaction of living bone to external force and the need of stress in order to make bones grow is seen very well in the case of bones of children. When the tibia has been destroyed in its central part by acute inflammation, although

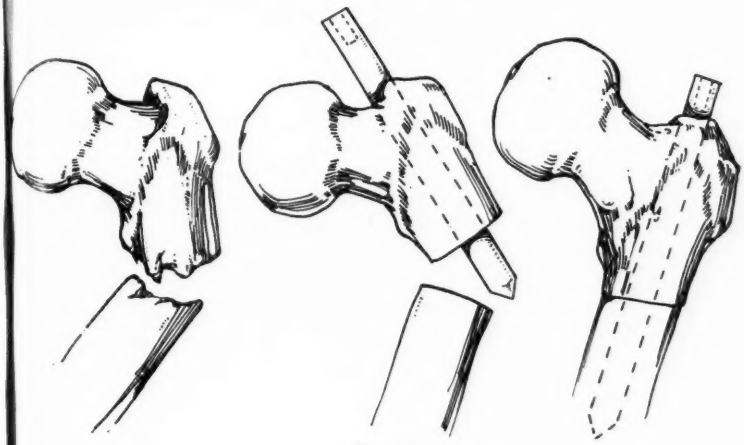

FIG. 13.
Graft used as a nail to fix a fracture of the upper end of the femur.

FIG. 14.
Graft used as a nail to fix the lower end of the humerus to the shaft.

the two extremities of the bone remain and live, and although these extremities contain the growing points of the bone, yet no growth takes place, the reason being that the stimulus of force transmitted from one end of the bone to the other

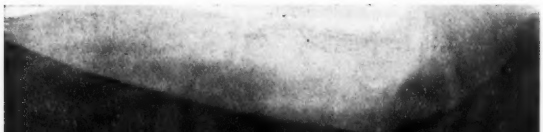

FIG. 15.
Gap fracture of humerus.

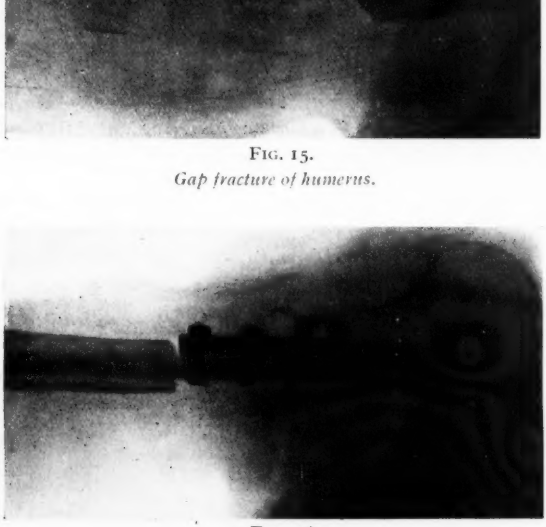

FIG. 16.
Same case shown in last figure, treated by a two-piece graft.

is absent. If in such a case a long strut of living bone be taken and thrust firmly into the two remaining extremities of the original bone, then within a few months active growth of bone takes place, not only in respect of thickness in the graft but also in respect of the length of the whole bone.

Just as blood pressure is necessary for the circulation and as movement is necessary for the vitality of muscle, so stress and strain are the essential elements necessary for health and growth of bone.

The purely mechanical value of the restoration of continuity is shown in the case of a child from whom the central portion of the humerus had been resected for fibro-cystic disease. This operation involved the removal of 3 inches of the entire thickness of the shaft of the bone, but the vascular periosteum was preserved. At the time of the operation continuity was immediately restored by a two-piece graft made of boiled beef bone, and you will observe that within a few weeks of the operation the new shell of bone is already to be seen in the skiagram, and that within one year the contour of the original bone has been perfectly re-formed. (Fig. 17.)

What now has been gained in such a case by the implanting of the foreign bone into the human tissues, because clearly here all the new bone is human bone produced by human tissues? The gain has been twofold. First, that from within four weeks of the time of the operation the child could use his arm, and therefore practically his disability

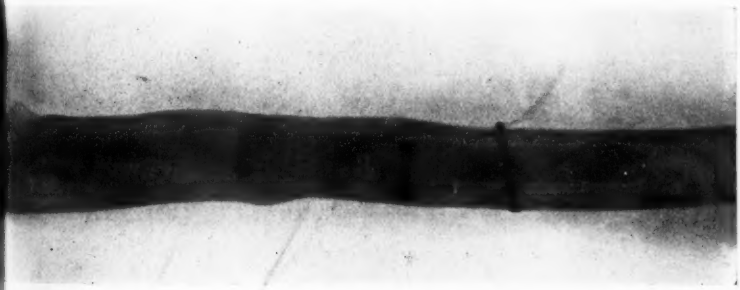

FIG. 17.

Humerus of a boy aged 12, one year after resection of 3 inches of the shaft for cystic disease, with union by a two-piece beef bone graft.

was at an end. Secondly, by uniting the two ends of the bone firmly that essential active force was provided which alone can stimulate healthy and rapid new bone growth.

It is a somewhat remarkable reflection on the mistaken idea which has sometimes been held regarding the dangerous nature of dead bone, to think that one can deliberately bury a large piece of bone which is not only dead, but which is not even human, in the skeletal tissues, that such tissue will be tolerated, then incorporated, and lastly slowly absorbed. The various stages of such transmutation of beef bone into human bone can be seen in the X-ray pictures of these cases taken at various periods.

Unfortunately, there are sometimes cases where owing to sepsis or to extensive injury of the soft parts a gap in a bone cannot be made good. In some such cases we may, by the exercise of ingenuity, substitute one bone in place of an adjacent bone. Thus, for example, the fibula may be

FIG. 18.
Forearm of a man who had a gap fracture of the radius.

substituted for the tibia, that is to say, may be made to take the place which had been occupied by the larger bone.

Another example of bone substitution is afforded by cases of gap fracture of the radius in which grafting has failed for one reason or another. This is seen in the case of a man who had lost a large part of his radius and in whom nothing served to restore its continuity. (Figs. 18, 19, and 20.) The result was that his hand, losing its skeletal support,

FIG. 19.

Showing the transplantation of the shaft of the ulna into the lower end of the radius.

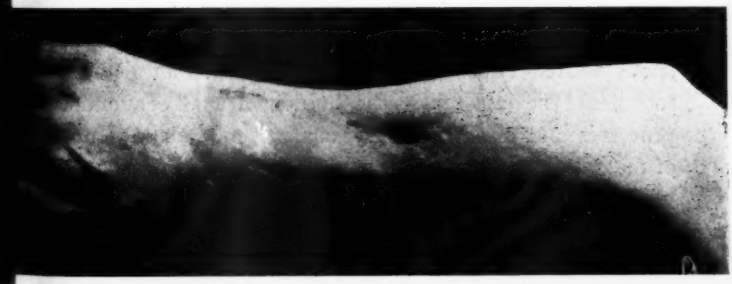

FIG. 20.

The same arm after the operation.

became so much deflected as to be weak and useless. It seemed hopeless to attempt a further graft, and the patient was unwilling to try. The end of the ulna was therefore removed and the shaft of this bone brought across to the middle of the forearm and thrust into the radius, thus forming a central skeleton to the forearm in place of the paired bone skeleton, and you will see that this gives a symmetrical hand of considerable strength. He has been trained lately as a photographer, and with this hand actually prepared the lantern slides illustrating this lecture.

THE RÔLE OF DILUTE ACIDS IN INFECTION.

BY

I. WALKER HALL AND A. D. FRASER.

THE tendency of modern thought is to probe into the infinitely little. In physics, chemistry and bio-chemistry the older ideas are being re-clothed to fit newer conceptions. Medicine is exhorted to focus attention on the beginnings of disease.

This changing frame of mind makes exhausting demands upon the methods available for such observations. Progress has to wait for the provision of efficient technique. Hurry spells wasted effort; for he who examines in detail the technics of the day or visits the "midden heaps" of abandoned processes and discarded data soon understands the utility of making haste slowly. In the laboratory area of scientific medicine, at all events, there is hardly a field which has not first to be harrowed with the testing and improvement of methods. Bacteriology, bio-chemistry, micro-chemistry alike stand hesitating, not daring to make undue applications of the results of current work.

One of the basal factors of experiment and observation is the estimation of neutrality. A piece of litmus paper no longer suffices. Even the titration of total acidity, or alkalinity, fails to yield adequate information. A knowledge of the intensity of the reaction, or ion concentration is also required.

When sodium chloride is added to water to make normal saline solution, the sodium and the chloride separate into ions, or sub-molecular groups charged with electrical functions. If HCl is substituted, the acid solution contains hydrogen ions and chloride ions. The H ion loses a negative charge and becomes positively attractive: while the Cl ion gains a negative charge. These H ions circulating in animal tissues act as accelerators, or catalysers of the metabolic processes of tissue cells. Each cell of the body requires an environment of H ions ranging from 0,000,000,1 to 0,000,000,01 grams H per litre of tissue fluids for its normal work. If these limits are exceeded, abnormal changes result. The cell colloids, such as globulins, are not properly hydrated and cloudy swelling follows. These ions are appropriately designated as the workmen of the cells and by control of enzyme action influence the metabolic exchanges. It is obvious, therefore, that accurate determination of the ion capacity, or concentration, is a necessity for advances in the knowledge of cellular processes.

Taking absolutely pure water as exact neutrality, its position in the scale of reactions is represented for convenience by the index, pH 7. Blood is a trifle alkaline, pH 7·4. The muscles yield a pH of 6·9, urine 5·6, gastric juice 0·9–1·6, all being more acid than blood.

One of the chief functions of the blood is to maintain a general degree of tissue reaction, in spite of the local differences and of its continuous receipt of acids and bases from the food, and carbonic, phosphoric, sulphuric and

lactic acids produced during ordinary metabolism. It achieves this by reason of its content of proteins, phosphates and bicarbonates which neutralise or "buffer" the acid materials.

In disease there are also local acidities which increase this work of the blood. In acute abscesses the pH is 5·0, in chronic abscesses 6·5, in ascitic fluid 7·6. During the stage of resolution of lobar pneumonia the absorption of the exudate depends upon changes in acidity, from pH 7 to pH 6·5, which determine the extent of necessary enzymatic actions.[1]

While we were investigating the technics upon which these figures were based we found that they had been applied to a few acids only. It was necessary, therefore, to determine how far they could be utilised for all types of mineral and organic acids, and especially for those that are built up within the body tissues during normal and abnormal processes. As this demanded the co-operation of the physical chemist, we turned to Professor McBain for help. He kindly assisted us with discussion and criticism and allowed Miss Kieser, one of his honours students, to check independently our own findings. These physical measurements showed that our methods were available and accurate for a wide range of acid substances.

On this basis we extended our observations upon pH influences obtained from acids of high dissociating capacities and also from those that dissociated but slightly, leaving in solution a large proportion of the unaltered acids, such as the monobasic, di-basic, hydroxy and polyvalent fatty acids.

We soon found that when bacteria are subjected to minute alterations of acidity obtained by the use of different types of acids, their growth may be accelerated or retarded.[2] For instance, 1/200 n/nitric acid or 1/200 n/lactic stimulates

the growth of streptococci, while 1/100 n/citric acid retards it. And so on throughout the whole range of pyogenic and other organisms there are to be found H ions with the other ions, or anions—in this case, nitrates and lactates—which catalyse the ordinary growth of the organisms. With diphtheria bacilli, phosphoric, lactic and nitric derived ions act as stimulants, whereas the saturated monobasic fatty acids, such as formic, butyric and propionic, retard development.

When it is remembered, that the pH of the duodenal contents controls the prepyloric sphincter and the rate of outflow from the stomach, and when we point out that sputum contains areas varying in their pH content, and that local pH alterations are necessary for the effective performance of physiological functions as well as for adequate response to infections, it is evident that a careful survey of the associated factors is called for. There are the questions of the influence of minute pH ranges in the tissues as they affect the acceleration or retarding during bacterial invasion: the possibility of inhibiting the growth of organisms in purulent conditions by altering the pH of the exudate: the conditioning of local areas so that diphtheria bacilli cannot attain their necessary alkaline surroundings for the production of toxin: and a damaging pH of tissues so that the diagnosis of experimental inoculations may be hastened.

Much claims that by injecting lactic acid together with saprophytic bacteria into animals he can turn a harmless germ into a pathogen.[3] Our experiments so far have not confirmed this, but we have been able to raise the virulence of pneumococci by similar procedures.

Although these investigations are in their preliminary stages and are not communicated for purposes of criticism and information, there has emerged a very important application

in the improvements of the technique of blood cultures. By the use of altering the pH of the blood media, we have obtained an earlier and higher percentage of positive results and previsioned a means of concomitant estimation of the exact bacteriolytic resistance manifested by the patient.

As we look at infectious processes in the light gained by a study of these various forms of acidification, we begin to understand how there is also to be considered the penetrability and permeability of the individual acids. The knowledge of the varying permeability of red and white corpuscles in health and disease points the way to a closer acquaintance with similar functions in cells lining serous cavities and tissue spaces. The recent work of Crozier, Haas and others indicates the high penetrability possessed by lactic and mineral acids.[4,5] This throws another ray of illumination upon the primary or secondary features which are met with in oral and intestinal sepsis. If the presence of very minute quantities of dilute acids affects bacterial growth on the one hand and influences penetrability and permeability on the other one, we may look at infection from another angle and re-enter obscure fields of enquiry with an additional weapon for attack.

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[5] Haas, A., *J. Biol. Chem.*, 1916, xxvii. 225.

Reviews of Books.

The Psychology of the Special Senses and their Functional Disorders. By ARTHUR F. HURST, M.A., M.D. Oxon., F.R.C.P. Pp. x., 123. London: Oxford Medical Publications. 1920. 12s. 6d. net.—The subject-matter of this book is taken from the Croonian Lectures for 1920, and is based on the text that hysteria is a condition in which symptoms are present which are the result of suggestion and are curable by psychotherapy. Dr. Hurst denies the presence of physical stigmata until they are looked for and produced by the physician, and regards suggestibility as the only mental factor necessary; and as this is a normal factor in everyone's mental make-up, anyone may develop an hysterical symptom provided the suggestion is strong enough. Interference with the functioning of the various senses may result from suggestions conveyed by the physician looking for stigmata, by perpetuation of an absence of perception during stupor or similar mental conditions, and perpetuation of absence sensation due to temporary organic lesions which have passed away. The immediate cause of the interference with function is the absence or overaction of attention in relation to the sensory area involved, and the scope of psychotherapy is to facilitate or inhibit the "attentive effort" towards these areas. This "attentive effort" is said to lower the resistance at synaptial junctions and its absence to increase this resistance, but the author does not venture to speculate as to what constitutes "attentive effort." The book is very readable, and the author's views on hysteria are clearly annunciated. All practitioners in psychotherapy will not find themselves in agreement, but the unification of all symptoms resulting from suggestion is not only convenient but pragmatically sound, since the early removal of hysterical symptoms is the ideal to aim at, however complicated a neurosis may be. The only risk of Dr. Hurst's method is that the inexperienced may fancy that, having removed the hysterical symptom, he has necessarily completed his duty to his patient.

The Science of Ourselves. By SIR BAMFYLDE FULLER, K.C.S.I., C.I.E. Pp. ix., 326. London: Oxford Medical Publications. 1921.—Sir Bamfylde Fuller covers a wide field and gives the outcome of long and varied experience. It is impossible here to summarise or to criticise the conclusions to which he has been led on an independent (sometimes rather

too independent) line of thought. One must dig down to the fundamental issue. This is the old, yet ever new, problem of the relation of mind to body. It is commonly held that there are just two mutually incompatible solutions: (1) that mind is explicable in terms of certain very complex physiological events which occur in the brain or some part of it; (2) that mind belongs to an order of being disparate from that to which the body and the brain belong. When the author affirms that the development of the cerebral hemispheres "introduces a new and independent condition—that of consciousness," and when he says "that ideas, whether impression, record, or concept, are material things, and may be figured as clusters of brain-cells," he accepts the former solution, and he devotes the twenty-two chapters of this book to its elaboration. The alternative view—that which assumes the modern guise of either Vitalism or Animism—is scarcely so much as mentioned. But a third view is to-day striving to find expression in evolutionary terms. The author accepts three planes of evolution in the nervous system, and distinguishes them as the physical, the psychical, and the reflective, whereas we would extend this series. In the organism there are events on (say) five planes: (*a*) the physico-chemical; (*b*) the vital; (*c*) the instructive (in one sense of this word); (*d*) the unreflective; (*e*) the reflective. One never finds (*b*) without (*a*); (*c*) without (*b*) and (*a*); and so on. But why not frankly accept the events at any given level as something new which characterises that level?

The Theory and Practice of Massage. By BEATRICE M. GOODHALL-COPESTAKE. Third edition. Pp. xx., 270. London: H. K. Lewis and Co. 1920. Price 12s. 6d. net.—This is a very excellent and thoroughly practical treatise by an actual teacher who knows the difficulties which students find and the dangers which they have to avoid. It contrasts most favourably with certain former text-books in the omission of much unproved theory and of claims for wonderful results. The chief defect is that it is too brief and condensed, largely because the author has felt it necessary to include accounts of active and passive movements, general exercises, the re-education of muscles, and even of some exercising machines in her short volume. Recent experience has shown the absolute necessity of these additions to ordinary massage, but it is hardly possible to give useful teaching on them in fifty pages. There are excellent descriptions of the surgical and medical "conditions" which are treated by massage, with directions to the masseuse on her duty in every case. We should like to see in the section on rheumatoid arthritis, where, by the way, valvular disease of the heart is not common, emphasis laid on the great need

of gentleness to avoid giving pain, and secondly the need of exercising patients on their feet when possible if the lower limbs are affected. When a patient takes to bed she is apt to become a prisoner for life.

A Handbook of British Mosquitoes. By WILLIAM DICKSON LANG, M.A., Sc.D. Pp. vii., 125. London: Printed by order of the Trustees of the British Museum. 1920. Price 20s. net.—The presence in England of large numbers of ex-soldiers infected with malaria parasites has of necessity focussed attention on the mosquito. Further, as *Anopheles Maculipennis* is widely distributed in these Isles, the importance of the association is self-evident. Another possible carrier, *A. Bifurcatus*, equally as common, together with *A. Plumbeus* complete the list of British Anopheles. Very clearly and simply the author points how to distinguish the sex, genus, and species of the gnat. To the majority, who may reasonably be contented to identify *A. Maculipennis*, the short account of the flies which may be mistaken for mosquitoes should be welcome. In Chapter iii. 21 species of mosquito are described in great detail. There is an interesting account of our present knowledge of the life-history of the mosquito. Even yet expert information is incomplete. We would have welcomed any observation from Dr. Lang on a related problem. Notwithstanding that we have in England the factors requisite for an outbreak of malaria, namely the presence of malaria-conveying Anopheles and individuals with parasites in the blood, yet the local infections in the British Isles have been few in number. The author throws cold water on the commonly-accepted belief that foreign mosquitoes can be introduced into this country by means of ships. The text is generously illustrated by 132 figures and 5 coloured plates. Many eminent living authorities have assisted Dr. Lang in several ways to produce a standard work of reference.

Scopolamine-Morphine. Semi-Narcosis during Labour. By WM. OSBORNE GREENWOOD, M.D. Pp. xi., 120. London: Oxford Medical Publications. 1918. Price 6s. net.—This little book gives an interesting history of the introduction of scopolamine-morphine semi-narcosis into obstetric practice, and an account of the results obtained by the earlier (mainly German) investigators. This part of the work, interesting though it is, is marred by the failure of the investigators to adopt any kind of standardisation for their observations. Collation of their results is therefore impossible. It should be stated that this failure is in no way due to the author, who has taken great pains to extract such information as could be got from the reports. The description of the chemistry of the alkaloids of

hyoscyamus and belladonna is interesting, and gives useful information as to the isomeric forms in which they occur. The chapter on the objects of the treatment gives concisely the advantages of this method of treatment as opposed to the use of general anæsthetics, with the important warning that neither anæsthesia nor analgesia is the objective, but that the correct procedure aims at amnesia only. We are in entire agreement with the author on this point. The various methods advised by different investigators and clear directions as to the carrying out of the author's method are described under the head of "Technique." So far as the series of cases observed by the author is concerned, in which amnesia without analgesia was produced, such conditions as postpartum hemorrhage, uterine atony and delay in the second stage are shown to have been infrequent. We are not quite as confident that these conditions can be so generally excluded, but at the same time we consider that the frequency of their occurrence has been rather overstated. The effects on the child are more definite, but we doubt whether the author's contention that cases of still-birth could be prevented by this treatment is entirely justified. The author makes a good case for his method of administration and for the more general use of semi-narcosis. He emphasises the fact that haphazard administration and insufficient subsequent supervision of the patient are not without grave risks, and are likely to bring discredit on those who fail in these respects. The book is well arranged, clear and definite in detail, and gives at the end an interesting series of charts of cases treated by the author. We can recommend this book to those interested in the subject.

Diathermy in Medical and Surgical Practice. By CLAUDE SABERTON, M.D. Pp. xii., 138. Illustrated. London: Cassell & Co. Ltd. 1920.—The aim of this handbook is to serve as a guide to students and practitioners who wish to master the technique of diathermy. Short historical notes are followed by a chapter on the electrical principles of the apparatus' use, and then a short chapter follows on the construction of the principal forms of apparatus. Physical and physiological effects of diathermic currents, the methods of applying the current, lead up to the sections on the uses of diathermy in various pathological conditions. The information is concisely and clearly conveyed. The claims of diathermic methods are put forward, but are not overstated. The book seems to admirably fulfil its purpose, and affords a practical, short and reliable guide for beginners in the subject, and should prove of much value to general practitioners.

Editorial Notes.

The late Dr. Carey Pearce Coombs.

We offer deep sympathy to Dr. Carey Coombs, our co-worker on the Editorial Staff, on the death of his distinguished father, Dr. Carey Pearce Coombs, J.P. Graduating as M.D. of London University in 1869, he settled in Castle Cary, where he enjoyed a very extensive practice and won for himself an influential position in the County of Somerset. As a physician he stood high in the estimation of his medical colleagues, who frequently sought his help in consultation in cases of difficulty. Many a time when attending meetings of the Bristol Medico-Chirurgical Society he made valuable contributions to our discussions. When, with mellowing years, the fragrance of simple courtesy and personal charm in the skilled practitioner, with long-life's knowledge of men, wins the trust and esteem of all who know him, he is "just one of the old school." Thus was Carey Pearce Coombs.

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American College of Surgeons.

A complete file of the *Bristol Medico-Chirurgical Journal* from the year 1882 onwards, with the exception of two numbers (viz. 7 and 8 for the year 1885), has been presented by the Society to the new Reference Library of the American College of Surgeons. That the gift of our *Journal* has been warmly appreciated is evident from the courteous letter of acknowledgment received from the Secretary-General, who states that "This forms a very important addition to our Journal file, and I wish to extend

to you on behalf of the Fellows of the American College of Surgeons our very sincere thanks and appreciation of your generous contribution. We hope very soon to build up a large reference library, and we felt that a complete file of your *Journal* was quite essential."

If any of our members can complete the set by presenting the two missing numbers mentioned above we shall be glad if he will kindly forward the same to the Assistant Editor.

* * * * *

Bristol Medical Library.

THIS letter from the American College of Surgeons reminds us of the advantages we enjoy in our own Medical Library. Sir William Osler, whose experience and judgment in the matter of Medical Libraries was great, had an almost envious admiration for the Bristol Medical Library, which he used to say was one of the best equipped in the provinces. The Medico-Chirurgical Society's library, conjoined with those of the Royal Infirmary and General Hospital, has been incorporated for many years with the Medical Library of the University, and together they comprise 24,629 books and 188 current periodicals.[1] Among the books many ancient master-works and rare editions are to be found; but the principal value of a reference library lies in its periodicals. We are particularly fortunate in possessing an exceptional number of complete sets of periodicals both current and defunct. To those engaged in original research the importance of having access to such a mass of periodical literature cannot be overestimated. It is with no small pride that so modern a University as Bristol can point to its Medical Library, the foundations of which are coeval with that of the Royal

[1] 15,351 of the Medico-Chirurgical Society's books and 9,278 of the University's, and of the current periodicals 106 come through the Society and 82 through the University.

Infirmary and carry us back to the year 1735. Many of the books were in the possession of Bristol doctors far earlier than that date. It is true that the oldest medical book in Bristol (a Guy de Chauliac MS. *circa* 1424) is in the safe and jealous keeping of the City Reference Library, but its very existence in our city serves to recall the respectable antiquity of the traditions of medicine in the western capital.

The value of the Medico-Chirurgical Library in itself is considerable, for no less than £12,000 would be required to replace the books and journals alone. To a large extent our *Medico-Chirurgical Journal* has been the means of acquiring these modern books sent for review and the periodicals which are sent in exchange.

As examples of old and rare books belonging to the Society's Library we may mention: Paracelsus, *Chirurgia magna*, fol., Argentoratum, 1573; Galen (Claudius), *Opera omnia* (Greek text), 5 vols. (in 10), 1538; Vesalius, *De humani corporis fabrica*, fol. [1543]; Fuchs (Leonhard), *De medendi methodo*, 1539; *Order (The) of the Hospitalls of K. Henry the VIII. and K. Edward the VI.*, 1557. [Black letter.]

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Prof. T. Loveday, Vice-Chancellor.

To the newly-appointed Vice-Chancellor of the University of Bristol, Prof. T. Loveday, Principal of the University College of Southampton, we offer a cordial welcome.

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Dinner to Sir Isambard and Lady Owen.

We look forward to the near occasion of the dinner in honour of Sir Isambard and Lady Owen, to be held at the Victoria Rooms, Clifton, at 7.45 p.m., on February 13th.

The Library of the Bristol Medico-Chirurgical Society.

The following donations have been received since the publication of the List in September.

December 31st, 1921.

Dr. Carey Coombs (1) .. .. 2 volumes.
Dr. Shingleton-Smith (2) .. .. 1 volume.
Dr. J. O. Symes (3) .. .. 1 ,,
Mr. C. H. Walker (4) .. .. 3 volumes.

Unbound periodicals have been received from Dr. Carey Coombs, Dr. Newman Neild, and Dr. W. A. Smith.

THE ONE HUNDRED AND FIFTH LIST OF BOOKS.

The figures in brackets refer to the figures after the names of the donors, and show by whom the volumes were presented. The books to which no such figures are attached have either been bought from the Library Fund or received through the *Journal*.

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Thompson, D. W.	*On Growth and Form*	(2)	1917
Wilde, P.	*Physiology of Gout, Rheumatism and Arthritis*		1921
Wilson, R. M. ..	*Symptoms and Treatment of Circulatory Disease*		[1921]

TRANSACTIONS, REPORTS, JOURNALS, &c.

American Journal of Surgery .. Vols. XXXIII., XXXIV. 1919–20
Boston Medical and Surgical Journal .. .. Vols. CLXXV., CLXXVI., CLXXVIII, CLXXXI.—CLXXXIII. 1916–20
British Journal of Dermatology .. .. Vols. XXX.—XXXII. 1918–20
British Journal of Ophthalmology .. (4) Vols. I., II., IV. 1917–20

Gazette hebdomadaire des Sciences med. de Bordeaux	Tom. XXXV. XXXVI. 1914–15
Johns Hopkins Hospital Bulletin	Vol. XXXI. 1920
Journal of Experimental Medicine ..	Vols. XXXII., XXXIII. 1920–21
Journal of Laryngology	Vol. XXXV. 1920
Journal of Medical Research	Vol. XLI. 1919–20
Journal of Tropical Medicine..	Vols. XIX.—XXIII. 1916–20
Medical Clinics of North America..	(3) Vol. III. 1919–20
Medical Science	Vols. II.—IV. 1920–21
Quarterly Journal of Medicine	(1) Vols. XIII., XIV. 1919–21
Royal Society of Medicine, Proceedings of	Vol. XIII. 1920

Obituary.

GEORGE FREDERICK ROSSITER, M.B. Lond., M.R.C.S. Eng.

THE passing of Dr. G. F. Rossiter, of Cairo Lodge, Weston-super-Mare, ends a life that one can truly say has been well spent. He received his medical education at St. Thomas's Hospital, where he won the Cheselden and Treasurer's Gold Medal, and graduated in honours at the University of London. Coming to Weston-super-Mare in 1877, he was appointed Hon. Surgeon to the Hospital in 1880, and remained on the active staff until 1905, when he resigned, and was appointed Consulting Surgeon.

Dr. Rossiter was at one time almost as well known to the medical profession of our city as he was at Weston-super-Mare, and his work and professional opinion was highly esteemed. To Dr. Alford, of Weston-super-Mare, we are indebted for the following note:—

"He was a member of the Bristol Medico-Chirurgical Society and for many years a regular attendant at the meetings, and would have been a President of the Society, but failing health made him decline the Council's nomination for his election.

"Possessing high ideals of professional honour, he acted up to them, and spent his active life in the service of others, delighting in his work for its own sake rather than for any monetary reward it might bring him.

"A genial, unassuming man, and most considerate to his colleagues and to those who were junior to him, Rossiter was particularly thoughtful. The writer can never forget his many kindnesses, and even during the last thirteen years, when

he was laid by, suffering from cardiac symptoms, he was ever ready to help and advise those who had the privilege of coming into contact with him, for he was not only a very able practitioner, but counsellor and kind friend, and there are many of his patients who are grateful to him in a multitude of ways for his judgment, whether in professional matters or otherwise, was sound and wise.

" The end came quite suddenly and peacefully in the early morning of Advent Sunday, November 27th."

To his widow and sons we tender sincerest sympathy.

Local Medical Notes.

UNIVERSITY OF BRISTOL.—Markham Skerritt Prize has been awarded to Sir J. Herbert Parsons, C.B.E., F.R.C.S.

Students of the University have recently passed the following examinations :—

M.D. LOND.—*Medicine :* E. W. Wade.

M.S. LOND.—W. Salisbury, M.D.

DIP. TROP. MED., CANTAB.—W. W. Pratt, D.P.H. Lond.

F.R.C.S.—*Primary Examination :* Gladys Llewelyn, B.Sc., J. A. James, J. R. Nicholson-Lailey.

M.B., Ch.B. BRISTOL.—*2nd Examination, Part I. :* Helen M. Aldwinckle, E. C. Bernard, Winifred P. Brinckman, G. L. Feneley, F. W. T. Hughes, T. P. Lalonde, C. B. Perry, L. B. Phillips, E. Southam, A. B. Vincent. *Anatomy only :* O. J. Dolland. *Organic Chemistry only :* J. F. O. Bodman, B. J. Boulton, Muriel E. Drew, W. L. Sleight.

CONJOINT BOARD.—*Anatomy and Physiology :* W. O. H. Evans, J. Hughes. *Surgery :* J. A. Prichard. *Midwifery :* Hilda E. Reynolds, J. A. Prichard, M. Critchley.

L.M.S.S.A.—J. L. Delicati, C. F. Long.

L.D.S., R.C.S. ENG.—*1st Examination, Part III. :* (*a*) H. H. Watkins ; (*b*) W. G. Smith, F. H. Woolley, A. J. C. Constance.

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